

Date: Friday, 13/06/2008 10:44:15 AM
 User: Linda Lacelle

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: AFT X-TUBE EXT HEIGHT(-013)
Job Number	: 38573		
Estimate Number	: 10563		
P.O. Number	:	Part Number	: D205596107
This Issue	: 13/06/2008 S.O. No. :	Drawing Number	: D205596107
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: / / Type : CROSSTUBES	Drawing Revision	: B
Previous Run	: 38574	Material	:
Written By	:	Due Date	: 30/06/2008 Qty: 1 Um: Each
Checked & Approved By	:		
Comment	: Est Rev D 05.03.21 Added bending procedure KJ/JLM Est Rev E 08-01-10 ECN 1075 DD Est Rev F 08.04.28 Added bending & mat'l EC verified by: DD		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	DC	DOCUMENT CONTROL
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Comment: DOCUMENT CONTROL

Photocopy D205-594 bluefile & type labels per PPP D205-596-107 CHG002

2.0	D6008180	Crosstube Extrusion
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Crosstube Extrusion

Batch: 038341

EL 8-6-16

3.0	BENDING CROSS	BENDING MACHINE - CROSSTUBES
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Comment: BENDING MACHINE - CROSSTUBES

Bend as per Dwg D2889 using CNC bender program

EL 8-6-16

4.0	CROSSTUBES	CROSSTUBES RESOURCE 1
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Comment: LANDING GEAR RESOURCE 1

Mark 20.36" for cutting from tangential line in the straight section from D2890 as per Dwg wall template.

AT-08-06-16

5.0	QC15	DIMENSIONAL CHECK OF X-TUBES
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Comment: DIMENSIONAL CHECK OF X-TUBES

outside user note 11: Liquid penetrant inspection issue P/O: 6594 c 208/06/190

Rec'd + inspect attached result to W/O: [Signature]

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 13/06/2008 10:44:15 AM
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Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: AFT X-TUBE EXT HEIGHT(-013)

Job Number: 38573

Part Number: D205596107

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

CROSSTUBES

CROSSTUBES RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Cut as per Dwg D205-596-107

2-Deburr & Inspect for surface damage. Polish cut surface. Scribe part # and batch # on one end of tube. *ET 08-06-17*

7.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

8.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Touch up ends of the tube with Chemical Conversion Coat per QSI 005 4.1

ET 08-06-17

9.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

10.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

1-Prime inside and outside with Immron per QSI 005 4.2

11.0

QC14

INSPECT SPRAY PAINT



Comment: Inspect Spray Paint

12.0

D3595063530

RUBBER CUSHION



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)

RUBBER CUSHION

batch _____

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D205-596-107 PAR #: N/A Fault Category: Supplier NCR: Yes No DQA: D Date: 28/07/15
 QA: N/C Closed: Date:

NCR: <u>38573</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
08-07-10	8.0	The material was found to be defective from the supplier.	<u>[Signature]</u> 28/07/10	See NCR 08-058 Tubes are to be scrapped & destroyed Full credit received.	<u>[Signature]</u> 28/07/10	<u>[Signature]</u> 28/07/10	<u>[Signature]</u> 28/07/10	<u>[Signature]</u> 28/07/10

NOTE: Date & initial all entries

Date: Friday, 13/06/2008 10:44:15 AM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: AFT X-TUBE EXT HEIGHT(-013)

Job Number: 38573

Part Number: D205596107

Job Number:



Seq. #:	Machine Or Operation:	Description :
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13.0	MS2192028	Clamp(per MIL-DTL-8783C)
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Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)
clamp(per MIL-DTL-8783C)
batch _____

14.0	D29401	Support
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Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)
Pick:
Qty Part number Description Batch
2 D2940-1 Support _____

15.0	CROSSTUBES	CROSSTUBES RESOURCE 1
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Comment: LANDING GEAR RESOURCE 1

1- Lightly scuff the bonded area using a 320 grit sand paper and clean the area with 41058 wash 'n' wipe

2- Apply magnobond 6398 as per dwg D205-596-107

Magnobond 6398 Batch: _____

EXP: _____

3-Install supports and clamps per Dwg D205-596-107. Torque clamps to 80-100 in lb. as per dwg

16.0	QC5	INSPECT WORK TO CURRENT STEP
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Comment: INSPECT WORK TO CURRENT STEP

17.0	PACKAGING 1	PACKAGING RESOURCE #1
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Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D205-596-107

Location: _____

PPP Rev: _____

18.0	QC21	FINAL INSPECTION/W/O RELEASE
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Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



mf 08-07-08

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

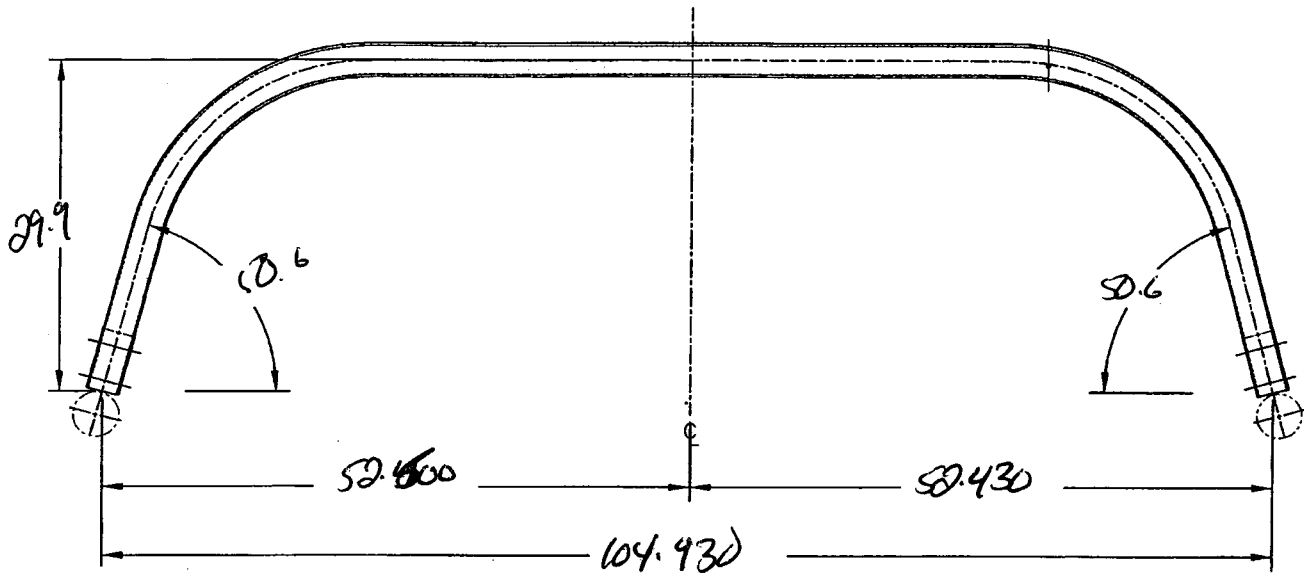
QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	38573
Description: Crosstube High-High Aft		Part Number:	D205-596-107
Inspection Dwg: D205-596-107 Rev: A		Page 1 of 1	

Required Dimension	Min	Max
Height	29.7	29.9
1/2 Span	52.4	52.6
Angle	49	52
Total Span	104.8	105.2



Comments

QC15 Inspection	
Date	08/06/16

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	

PARTS LIST:

Qty	Part Number	Description
X	D205-596-107	CROSSTUBE ASSEMBLY, HI-HI AFT
1	D6008-180	CROSSTUBE
2	D2940-1	SUPPORT
4	D3595-063-530	RUBBER CUSHION
4	MS21920-28	CLAMP
A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

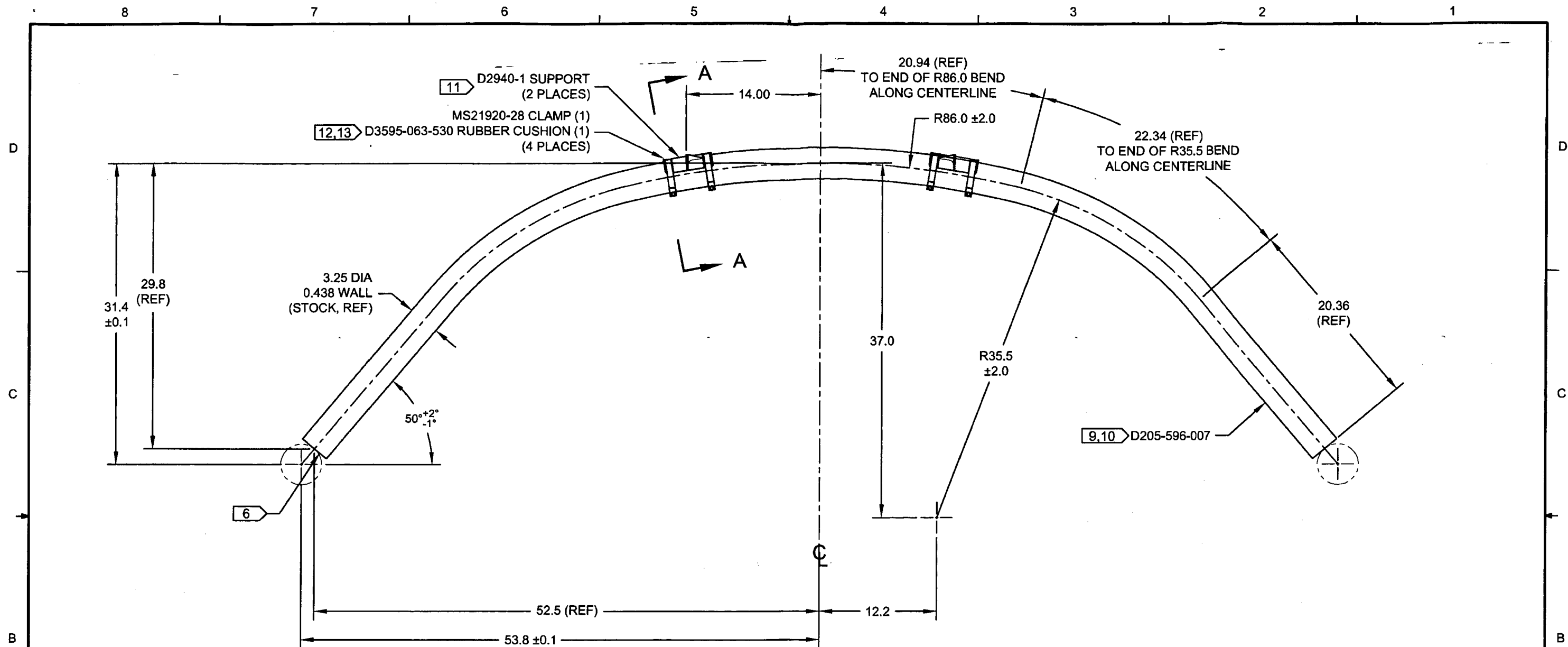
GENERAL NOTES:

- 1) MATERIAL: MANUFACTURE FROM D6008-180
FINISHED LENGTH = 127.28 ± 0.02
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART 005 4.2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH
VIBRATING STYLUS
- 7) WEIGHT: 50 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE
- 9) BEND PROGRESSIVELY WITH A MINIMUM OF 3 PASSES. MAXIMUM TUBE FLATTENING DUE TO
BENDING IS 6% BASED ON O.D.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) APPLY A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2940-1 THAT
WILL BE IN CONTACT WITH THE CROSSTUBE. LET CURE FOR 12 HOURS AFTER INSTALLATION
AND PRIOR TO PACKAGING.
- 12) INSTALL MS21920-28 CLAMPS WITH D3595-063-530 RUBBER CUSHIONS TO SECURE D2940-1
SUPPORT ON THE TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE
CROSSTUBE SUPPORT.
**NOTE: IT IS ACCEPTABLE TO SUBSTITUTE MS21920-28 CLAMPS WITH LONGER OR SHORTER
MS21920-XX CLAMPS TO ACCOMMODATE VARYING DIAMETERS. ENSURE THERE IS A MINIMUM OF
1.5 THREADS IN SAFETY ON THE NUTS.**
- 13) TORQUE CLAMPS 80 TO 100 IN-LB

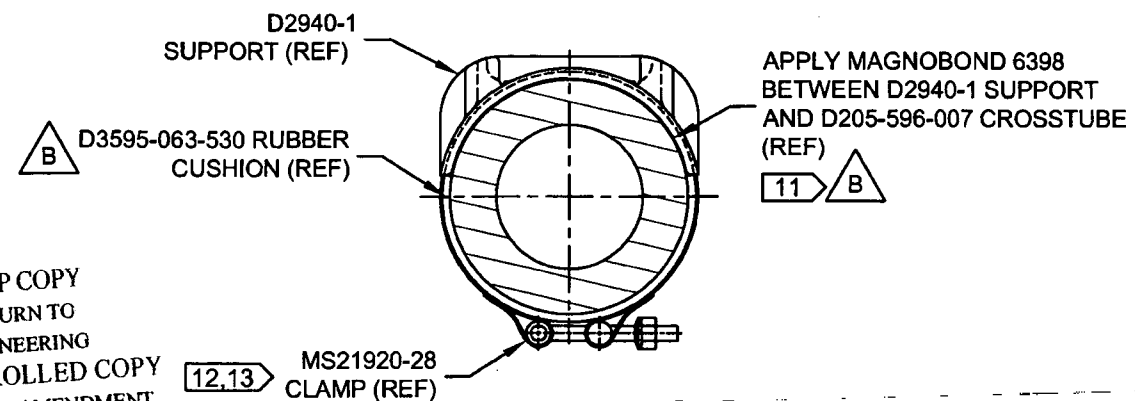
08-01. H WP

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WITHOUT NOTICE
WORK ORDER
NO. 38513

B	SUPPORT NOW MAGNOBONDED; REMOVE D2856-600-1009 ABRASION STRIP; UPDATED NOTES; ADDED D3595-063-530 CUSHION	MB	07.12.03
A	NEW ISSUE	DS	02.11.20
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	<i>[Signature]</i>		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D205-596-107	SHEET 1 OF 2
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	CROSSTUBE ASSEMBLY, HI-HI AFT	NTS
DATE	07.12.03	COPYRIGHT © 2002 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	



D205-596-107 CROSSTUBE ASSEMBLY, HI-HI AFT



SECTION A-A
SCALE 2:5

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WITHOUT NOTICE
WORK ORDER
NO. 38573

DESIGN	4	DART AEROSPACE LTD	
DRAWN	4	HAWKESBURY, ONTARIO, CANADA	
CHECKED	PH	DRAWING NO.	REV. B
MFG. APPR.	2	D205-596-107	SHEET 2 OF 2
APPROVED	4	TITLE	SCALE
DE APPR.	4	CROSSTUBE ASSEMBLY, HI-HI AFT	1:10
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LIQUID PENETRANT TEST REPORT

P- 08826

PAGE 1 OF 1

CLIENT DART AEROSPACE DATE 18 JUNE 2008 TIME AM ☒ PM ☐
ATTENTION LINDA LACELLE ACUREN JOB NO. 188-08-1361
ADDRESS 1270 ABERDEEN ST PO/WO NO. _____
HAWKESBURY ONTARIO WORK LOCATION HAWKESBURY
ACCEPTANCE STD. ASTM 1417/GS1-038 REV./DATE 2005
PROJECT _____
ITEM(S) EXAMINED _____

JOB DESCRIPTION _____ PROCEDURE NO. LT-0002 REV./DATE _____ TECHNIQUE NO. LT-0002-XXX REV./DATE _____
PART NO. D205596107, D206667103BL MATERIAL ALODINED ALUM THICKNESS _____
SCOPE WET FLUORESCENT LIQUID PENETRANT INSPECTION ON 100% OF THE EXTERNAL SURFACE

TEST DETAILS

METHOD ☒ FLUORESCENT ☐ VISIBLE ☒ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMULSIFIED
FAMILY BRAND MAGNA FLUX BLACK LIGHT S/N 8171 ☐ OUTPUT > 1000 μ W/cm² ☐ AMBIENT < 2 fc
PENETRANT ZL 67 MINIMUM DWELL TIME 10 MIN. LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER H2O MINIMUM DRY TIME > 10 MIN. OTHER CAL JUNE 2008
DEVELOPER SEDS2 MINIMUM DWELL TIME 10 MIN. LIGHT METER S/N _____ CAL DUE DATE _____
DEVELOPER TYPE ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY

TEST SURFACE

SURFACE CONDITION ☐ AS GROUND ☐ AS WELDED ☐ MACHINED ☐ SHOT BLASTED ☒ CLEAN BARE METAL
SURFACE TEMPERATURE ☐ < - 4°C/ 20°F ☐ - 4°C/ 20°F TO 10°C/50°F ☐ 10°C/50°F TO 52°C/125°F ☐ > 52°C/125°F

RESULTS- ☐ METRIC ☒ IMPERIAL

ITEM	COMMENTS	ACCEPT	REJECT
1PCS 205	JOB# 38794		
1PCS 205	JOB# 38573		
1PCS 205	JOB# 39055		
1PCS 206L	JOB# 39846		
1PCS 206L	JOB# 39851		
1PCS	NOT FORMED D6008-180		
	BATCH # 38341		
NO INDICATIONS OF DEFECTS			
ITEMS ACCEPTABLE TO STANDARD			

Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE JASON MURDOCH DTR # _____
TECHNICIAN (SIGNATURE): JODY BILMER REPORT REVIEWED BY: _____
NAME (PRINT): JODY BILMER NAME _____ INITIALS _____
CGSB LEVEL 2 SNT LEVEL _____ CGSB LEVEL _____ SNT LEVEL _____
CGSB REG. NO. 9901 CGSB REG. NO. _____

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